

GENETIC BASIS FOR THE VARIETAL FORMS OF *PHYMATODES*  
*TESTACEUS* (LINNAEUS)  
(COLEOPTERA: CERAMBYCIDAE)

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ABSTRACT

In a single population of *P. testaceus*, composed of both the blue and brown varieties, the blue variety outnumbered the brown almost exactly 3 to 1. This suggests that the color variation is due to a single gene, dominant for blue and recessive for brown.

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The type of the longhorn beetle, *Phymatodes testaceus* (Linnaeus), is an overall light brown in color. The one varietal form, *P. testaceus* Var. *variabilis*, while identical in size and shape, is strikingly different in color, having blue-black elytra (Knull, 1946 and Linsley, 1964). Hereafter the 2 varieties will be referred to as "brown" and "blue".

During late May through early June of the years 1969, 1970, and 1971 I observed the simultaneous emergence of both varieties from the bark of oak logs stored in my woodshed at Fletcher, North Carolina (altitude 2200 ft.). The logs were from a lightning-killed tree in my yard, and had been stored about 3 years.

Upon emergence, starting at dusk and continuing for several hours each night, the beetles immediately commenced mating upon the logs from which they had just issued. Coupling was indiscriminate both among and between varieties.

Over the 3 seasons I captured a series of 91 specimens (a good random cross section of the population), of which 67 were blue and 24 were brown. These figures approach very closely the simple Mendelian ratio of 3:1 to be expected from a cross of heterozygotes in which elytral color is controlled by a single gene dominant for blue and recessive for brown. This is affirmed by a chi-squared test which shows a probability of more than 75 percent that the hypothesis is correct.

If the hypothesis is indeed correct, we would expect to find homozygous local populations of 1 variety only, as well as heterozygous populations with various proportions of both varieties. I would be happy to hear from collectors who have had experience with populations of *P. testaceus* which bear upon this subject.

LITERATURE CITED

- LINSLEY, E. G. 1964. The Cerambycidae of North America, Part V. Taxonomy and classification of the subfamily Cerambycinae, tribes Callichromini through Ancylocerini. Univ. California Publ. in Ent. 22:63-64.  
KNULL, J. N. 1946. The long-horn beetles of Ohio (Coleoptera: Cerambycidae). Ohio Biol. Surv. Bull. 39 (Vol. VII, No. 4):204-210.